ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

DATE: February 1999

BUDGET ACTIVITY: 3 - Advanced Technology Development

PE NUMBER AND TITLE: 0603006A Command, Control and Communications Advanced Technology

	COST (*In Thousands*)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	24884	23747	20883	21508	22916	22604	26275	26272	Continuing	Continuing
0247	Tactical C4 Technology Integration	7542	12393	11400	10395	12925	12808	14941	14942	Continuing	Continuing
D257	Digital Battlefield Communications	8092	4937	4749	4823	5787	5493	6519	6033	Continuing	Continuing
D592	Space Applications Technology	2716	2443	4734	6290	4204	4303	4815	5297	Continuing	Continuing
D596	Field Laser Radar Demo	4661	0	0	0	0	0	0	0	0	9630
D597	Wave Net Technology	1873	0	0	0	0	0	0	0	0	3844
D617	Global Broadcast System (GBS) Information Management	0	3974	0	0	0	0	0	0	0	3974

A. Mission Description and Budget Item Justification: This program element consists of projects that will advance command, control, and communications (C3) technology to provide the soldier with high quality real-time battlefield information and integrate space technologies into Army tactical applications. The tactical C4 technology integration project provides software application development demonstrations, communications system integration and prototype products for distributed, mobile, secure, fully automated spread spectrum radio networks with measures to enhance the survivability and efficiency of Army tactical command, control, communications and computer (C4) systems. This program specifically addresses joint service demonstrations coordinated through the joint directors of laboratories, Information Systems and Technology Panel for C4, and provides key demonstrations of systems integration across the Army's battlefield functional areas. Work in this PE will provide multimedia inter networked communications while on-the-move with commercial standard gateway connectivity to both high-speed and legacy communications assets. This program also tests and evaluates net radio, common user, and distributed communications equipment and automated spectrum management aids which have potential to solve user needs; tests and evaluates equipment deficiencies; and provides critical future capabilities and supports new radio development and evaluation, in conjunction with the Defense Advanced Research Projects Agency (DARPA) and the Air Force (AF). The digital battlefield communications project will support the Army's battlefield digitization effort by demonstrating technology to integrate communications hardware and software capable of providing seamless communications for the digitized battlefield to meet emerging requirements for high-capacity/on-the-move information exchange and leading to a battlefield information transmission system for Force XXI. The space applications technology project will demonstrate novel applications of space assets for Army missions and support space technology integration. Work in this program element is consistent with the Army Science and Technology Master Plan (ASTMP), the Army Modernization Plan, and Project Reliance. Work in this program element is related to and fully coordinated with efforts in PE 0602782A (Command, Control and Communications Technology),

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PE 0203740A (Maneuver Control System), PE 0203726A (Advanced Field Artillery Tactical Data System), PE 0602783A (Computer and Software Technology), PE 0602702E (Tactical Technology), PE 0603772A (Advanced

Tactical Computer Science and Sensor Technology), and PE 0603789F (C3I Technology Development) in accordance with the ongoing Reliance Joint planning process.). These efforts contain no unwarranted duplication of effort among the Military Departments.

B. Program Change Summary	FY 1998	FY 1999	FY 2000	FY 2001
Previous President's Budget (FY 1999 PB)	25708	20109	19538	19008
Appropriated Value	26688	24109		
Adjustments to Appropriated Value				
a. Congressional General Reductions	-980	-362		
b. SBIR / STTR	-620			
c. Omnibus or Other Above Threshold Reductions	-204			
d. Below Threshold Reprogramming				
e. Rescissions				
Adjustments to Budget Years Since FY 1999 PB			+1345	+2500
Current Budget Submit (FY 2000 / 2001 PB)	24884	23747	20883	21508

Change Summary Explanation: Funding – FY99 funding (+4000) for Project D617 change due to Congressional increase.
FY00 Adds funding to battlefield ordnance awareness project to collect data and conduct analysis to meet national system accelerated schedule requirements.
FY01 Adds funds to space surveillance project to complete threat database and assessment algorithms.

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DATE: February 1999

BUDGET ACTIVITY: 3 - Advanced Technology Development

PE NUMBER AND TITLE: 0603006A Command, Control and Communications Advanced Technology

PROJECT: 0247

COST (*In Thousands*)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
0247 Tactical C4 Technology Integration	7542	12393	11400	10395	12925	12808	14941	14942	Continuing	Continuing

Mission Description and Justification: This project develops computer and communications technology options using commercial standard hardware and software to support mission planning and battlefield decision making. These efforts supports the Digital Battlefield Communications (DBC) advanced technology demonstration (ATD) via automated, real-time, digital information transfer, and the development and demonstration of communication systems needed for the Force XXI integrated digital battlefield. This project also supports the Tactical Command and Control Protect (TC2P) ATD by providing protection technologies for tactical internet command and control information systems, components and data, against modern network attacks. This project also performs development of on-the-move ultra-high frequency satellite communications technology, interfaces mobile ultra-high frequency satellite communications radios to combat net radio technology using commercial standard data packet protocols, and is developing multiband, multimode radio technologies as part of a Joint Service program with the Air Force and the Defense Advanced Research Projects Agency (DARPA).

FY 1998 Accomplishments:

- 2806 – Completed development of an integrated phased array antenna that can track multiple airborne relay systems from a mobile radio access point and allow robust on-the-move communications in support of the digital battlefield communications (DBC) advanced technology demonstration (ATD).
  – Conducted laboratory testing and evaluation of enhanced commercial terrestrial personal communication services (PCS) hardware for integration into the Army's warfighter information network proof of concept. Investigated and evaluated digital network radio technology to support the requirements for the Army's future digital radio.
  – Demonstrated narrow band, high frequency communications technology with tactical internet access.
  – Began development of an initial prototype of a photonically controlled phased array antenna to reduce size, weight and power requirements to meet future on-the move communications requirements.
  – Demonstrated on-the-move surrogate direct broadcast satellite (DBS) capability.
- 2675 - Designed and developed the Wideband Network Radio (WNR), WRN Testbed (WRNT), Software Development Environment (SDE), and the WRN.
  -Developed and delivered draft WRN architecture document, WRN system technical specifications and WRN waveform technical specifications.
  – Started development of WRN wideband waveform and protocols.
- 2061 – Integrated and demonstrated end-to-end super high frequency surrogate satellite communications capability for range extension. Began satellite communications terminal enhancements to reduce size and weight increasing throughput and mobility.
  – Developed unmanned aerial vehicle based battlefield-paging capability.

Total 7542

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	PROJECT 0247

FY 1999 Planned Program:

•	3036	– Develop and deliver all WRN products (WNR, WRNT, SDE, and WB waveform). – Test and evaluate new Joint Tactical Radio System (JTRS) WB waveforms, radios, and DARPA GloMo technology.
•	5132	– Demonstrate integrated DBC ATD technologies in support of high-capacity digitized communications and split-based operations. – Integrate and demonstrate enhanced commercial terrestrial PCS capability in the Army's warfighter information network proof of concept. – Demonstrate integrated phased array antenna to meet on-the-move radio access point communications requirements. – Develop photonically controlled phased array antenna to reduce size, weight and power requirements for on-the move communications technologies. - Demonstrate wideband high frequency communications technology, with access to the tactical internet, for transmitting maneuver and intelligence data from long range surveillance units that are beyond line of sight.
•	3942	– Demonstrate unmanned aerial vehicle based battlefield paging. – Fully integrate and demonstrate end-to-end unmanned aerial vehicle based surrogate communication (SHF) satellite capability, including ground component. – Demonstrate a surrogate for ultra high frequency (UHF) low earth orbit (LEO) multiple beyond line of sight communications (MUBLCOM) capability (leverages DARPA development). – Build and demonstrate airborne switching capability integrated with super high frequency surrogate satellite communication payload.
•	283	- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
Total	12393	

FY 2000 Planned Program:

•	4430	- Investigate and evaluate information protection technologies for the upper tactical internet with focus on network access protection, intrusion detection and host level protection.
•	3750	- Develop wideband power amplifier compatible with Joint Tactical Radio System (JTRS). - Integrate very high frequency (VHF)/ ultra high frequency (UHF) radio frequency (RF) receiver/transmitter multiplexer into single box. - Test and evaluate UHF multiplexer in an operational exercise.
•	1795	- Conduct an initial review of existing and proposed (LEO/ medium earth orbit (MEO)) wideband commercial satellite communication (SATCOM) technologies and capabilities. Initiate development of a fast recovery modem for extremely high frequency (EHF) on the move narrowband communication. - Demonstrate capability of joint tactical radio system (JTRS) compatible OTM antenna, and begin development of wider bandwidth OTM antenna. - Demonstrate performance increases possible using structure tuned antenna technology.

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- 1425 - Complete fabrication and laboratory test of optically controlled phased array antenna.
  - Integrate system in shelter; test and demonstrate complete optically controlled phased array antenna systems.

Total 11400

FY 2001 Planned Program:

- 4535 -Investigate and evaluate information protection technologies for the upper tactical internet expanding the effort to address security management and malicious code detection and eradication. Integrate and test command and control protection solutions in a field environment.
- 3000 - Conduct test and evaluation of a wideband power amplifier.
  - Evaluate UHF MUX and wideband power amplifier prototypes through WRN testbed and field test.
- 2860 - Develop a fast recovery modem for Ka Band LEO/MEO on the move wideband communication .
  - Test and evaluate expanded (wideband) bandwidth JTRS compatible OTM antenna.

Total 10395

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DATE: February 1999

BUDGET ACTIVITY: 3 - Advanced Technology Development

PE NUMBER AND TITLE: 0603006A Command, Control and Communications Advanced Technology

PROJECT: D257

COST (*In Thousands*)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D257 Digital Battlefield Communications	8092	4937	4749	4823	5787	5493	6519	6033	Continuing	Continuing

Mission Description and Justification: The objective of this Digital Battlefield Communications (DBC) advanced technology demonstration (ATD) project is to integrate communications hardware and software capable of providing seamless, multimedia communications for the digitized battlefield and to meet emerging requirements for high capacity, on-the-move information exchange. Force projection and evolving doctrine are expected to require significantly more communications bandwidth, drastically altered traffic patterns, new services (e.g. imagery), and higher mobility, especially at echelons brigade and below, than is currently supported by today's communications systems. This project will develop and demonstrate a series of products, through an evolutionary process, capable of transitioning into field units to support the future digitized brigade, division and corps. The project will build on early system performance models begun under the combined arms command and control program, in order to identify appropriate non-developmental wideband communications systems to supplement the data capacity of existing lower echelon networks. Once data "hot spots" and congestion points are identified in the existing architecture, warfighter demonstrations will be used to demonstrate the warfighter benefit of added capacity at key locations on the digitized battlefield, and to identify and size fieldable deployment packages consisting of wideband digital communications and support devices to supplement existing tactical communications systems. Technology demonstration units of wide-bandwidth digital radios will be required. Laboratory demonstrations and protocol development to permit asynchronous transfer mode traffic to interface with tactical radio/satellite equipment will be conducted. A mobile radio access point consisting of a high capacity, on-the-move trunk radio, powerful portable switch and legacy wide bandwidth digital subscriber networks will be developed and evaluated by troops in the field. The radio access point (RAP) will provide a high bandwidth on-the-move trunk feed in support of combat net radio, single channel radio access, and wideband data subscribers, all communicating on-the-move. Network planning tools and dynamic inter-network management schemes will be exploited for both pre-battle communications planning and dynamic reconfiguration during deployment. Development of on-the-move antennas begun in prior years will be extended to provide fieldable, low profile antennas better suited to on-the-move wideband needs to connect forward mobile elements in split based deployments. Wideband airborne communications relays will be developed and evaluated for warfighter utility in achieving range extension at high data rates. Commercial personal communication systems and direct broadcast satellite will be evaluated for possible tactical exploitation.

FY 1998 Accomplishments:

- 3231 – Completed development of the Digital Battlefield Communications (DBC) Advanced Technology Demonstration (ATD) radio access point prototype to demonstrate connectivity with the Army's warfighter information network proof of concept in a static environment.
  – Developed an integrated real time internet protocol (IP) with mobile IP for tactical multinet gateway ATM to support radio access point with low bit rate video teleconferencing.
- 2404 – Integrated and demonstrated dual band (X-band and Ku-band) airborne communications relay package capable of supporting 45 Mbps communications in support of DBC ATD.
  – Completed development of a high capacity trunk radio capable of operating at a data rate up to 45 Mbps while on the move.

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BUDGET ACTIVITY 3 - Advanced Technology Development	PE NUMBER AND TITLE 0603006A Command, Control and Communications Advanced Technology PROJECT D257

FY 1998 Accomplishments (continued):

– Completed development of a high capacity trunk radio capable of operating at a data rate up to 45 Mbps while on the move.

- 2457 – Conducted evaluation of the DBC ATD application and unique architectural needs to apply emerging commercial satellite personal communication services (PCS) technology to battlefield communications.
  – Completed laboratory integration of enhanced commercial terrestrial PCS hardware for integration into the Army's warfighter information proof of concept.
  – Demonstrated ATM benefits of a high bandwidth MSE backbone and interface ATM technology to the high capacity trunk radio in Division XXI.
  – Developed military-unique ATM enhancements (i.e. integrated voice, tactical adapter, forward error correction) to support operation in a tactical environment.
  – Conducted user tests of digital battlefield communications technologies in Division XXI and other user demonstrations. Provided technical/engineering and on-site field support for digital battlefield communications technologies in Division XXI.

Total 8092

FY 1999 Planned Program:

- 2894 – Demonstrate mobile radio access point. Integrate and demonstrate DBC ATD radio access point with on-the-move high capacity trunk radio and phased array antenna capable of mobile operation.
  – Integrate on-the-move, high capacity, trunk radio and mobile phased array antenna into the radio access point.
  – Develop, evaluate and demonstrate dual band airborne communications relay antenna improvements to provide consistent gain across the coverage area for improved range extension communications.
  – Demonstrate a dual band airborne communications relay package capable of supporting 45-Mbps communications
- 1956 – Integrate and demonstrate secure tactical PCS capability into the warfighter information proof of concept in support of the DBC ATD.
  – Insert and evaluate digital battlefield communications technologies in the Joint Warfighter Interoperability Demonstration.
  – Integrate and demonstrate enhanced ATM features into the radio access point and the Army's warfighter information proof of concept.
  – Demonstrate Army application of satellite PCS technology to provide a highly mobile, handheld, worldwide communications capability.
- 87 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Total 4937

FY 2000 Planned Program:

- 2014 - Extend existing communications testbed into a ground mobile testbed to provide an environment to demonstrate the concepts of mobile, seamless communications between the mobile trunking backbone communications and to the subscriber, lower data rate users.
  - Develop capability to enhance communications services to mobile, wireless tactical user such as voice, data, video, e-mail, file transfer, web browsing, video conferencing, etc.

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	PROJECT D257

FY 2000 Planned Program: (continued)

- 2735 - Develop a multi-mode personal communications systems (PCS) handset prototype to facilitate the objective of one common handset for all user applications.
- 2735 - Investigate and identify communications technologies to support distributed mobile wireless tactical operations centers.
- 2735 - Identify and mature key technologies developed under the Defense Advanced Research Projects Agency (DARPA) Global Mobile program to support networked on-the-move communications.

Total 4749

FY 2001 Planned Program:

- 2073 - Integrate networking and link layer technologies for the future generation tactical internet into the ground mobile testbed.
- 2073 - Explore methods to achieve guaranteed quality of service associated with real-time, internet protocol based, multimedia communications over tactical asynchronous transfer mode backbone networks.
- 2073 - Enhance commercial personal communications technology currently being adapted to tactical applications to provide system elements that safeguard against inherent system vulnerabilities.
- 2073 - Develop wireless LAN technology to provide fast Ethernet connectivity for mobile and ad-hoc networks where wired networks are inappropriate for existing infrastructures.
- 2750 - Integrate and demonstrate the matured DARPA Global Mobile program technology to support networked on-the-move communications. These technologies will be integrated into the ground mobile testbed.
- 2750 - Integrate, demonstrate and evaluate communications technologies to support distributed mobile wireless tactical operations centers in the ground mobile testbed.
- 2750 - Integrate enhanced communications services capability for mobile wireless tactical users into ground mobile testbed.
- 2750 - Integrate multiple PCS waveforms into multi-mode PCS handset prototype.
- 2750 - Integrate, evaluate and demonstrate key technologies developed under the DARPA Airborne Communications Node (ACN) program for extended range networked communications with the ground mobile testbed.

Total 4823

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DATE: February 1999

BUDGET ACTIVITY: 3 - Advanced Technology Development

PE NUMBER AND TITLE: 0603006A Command, Control and Communications Advanced Technology

PROJECT: D592

COST (*In Thousands*)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D592 Space Applications Technology	2716	2443	4734	6290	4204	4303	4815	5297	Continuing	Continuing

Mission Description and Justification: The objective of this project is to optimize Army utilization of space based systems. The project involves: (a) space technology development and demonstrations for evaluating technology feasibility, determining Army utility, and refining requirements, and (b) space technology integration into battlefield operating systems. The project also addresses: defining Army requirements for space platforms; demonstrating advanced, compact space hardware; developing algorithms that optimally process space data; integrating satellite direct down link to ground systems; and providing an advanced technology base for the Army space exploitation demonstration program, the Tri-Service DoD space test program, and the exploitation of commercial space capabilities. The project focus is on space force enhancement (communications, intelligence, position/navigation, reconnaissance, surveillance, target acquisition, weather/terrain, missile warning) and space control (space surveillance) to improve warfighting capabilities and operations other than war.

FY 1998 Accomplishments:

- 642 – Developed design for unmanned aerial vehicle (UAV) and space based spectral overhead sensor technology with direct downlink capability.
- 1488 – Developed processing architecture for near real time processing of battlefield ordnance awareness data and collected key threat data.
- 586 – Demonstrated air to surface laser communications; assembled and tested prototype portable ground unit; integrated prototype portable ground unit into satellite to ground laser communications architecture.

Total 2716

FY 1999 Planned Program:

- 618 – Baseline sensor packaging and configuration for UAV and space applications with initial demonstration of on-focal plane array (FPA) processing of overhead sensor spectral data.
- 1336 – Develop an air platform battlefield ordnance awareness sensor design with onboard processing; develop algorithms.
- 436 – Demonstrate space to ground link and transition to Space and Missile Defense Battle Lab for laser communications tactical internet evaluation.
- 53 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Total 2443

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FY 2000 Planned Program:

•	1073	Demonstrate a hyperspectral overhead sensor with smart focal plane processing in the 1-2.5,3.5 and 8-12 micron wavebands; improve cueing and clutter rejection using polarization and on-FPA processing.
•	3166	Collect data in a variety of environments and develop targeting, identification, simultaneous events, and battlefield ordnance awareness software.
•	495	Develop phenomenology document and complete conceptual space surveillance design.
Total	4734	

FY 2001 Planned Program:

•	1105	Demonstrate on-chip neuromorphic processing and hyperspectral spatial and temporal signature processing for overhead sensor technology using airborne testing.
•	4205	Demonstrate near real time airborne battlefield ordnance awareness reporting; complete experimentation phase; define technical requirements for ordnance reporting; transition to the Space-Based Infrared System (SBIRS), National platforms, and the program executive office global combat service support (PEO-GCSS).
•	980	Complete development of threat database and assessment algorithms for space surveillance.
Total	6290	

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PROJECT: D596

COST (*In Thousands*)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D596 Field Laser Radar Demo	4661	0	0	0	0	0	0	0	0	9630

Mission Description and Justification: The objective of this Congressional special interest project was to provide data reduction and analysis of field experiments data to evaluate the utility of the Field Laser Radar for Army applications. The Field Laser Radar is an imaging, carbon dioxide (CO_2), laser radar (LADAR). This LADAR transmits a waveform capable of high-resolution measurements in both range and velocity. Potential applications that were investigated included theater ballistic missile defense and cruise missile defense. In addition, the equipment can provide long range, coherent remote sensing of chemical warfare agents.

FY 1998 Planned Program:

- 2500 – Completed chemical warfare agent detection experiments.
- 150 – Completed design and development for target mount.
- 1711 – Completed refinement of tracking and imaging algorithms.
- 200 – Completed development of discrimination algorithms.
- 100 – Completed chemical warfare agent detection experiments.

Total 4661

FY 1999 Planned Program: Program not funded in FY 1999

FY 2000 Planned Program: Program not funded in FY 2000

FY 2001 Planned Program: Program not funded in FY 2001

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PROJECT: D597

COST (*In Thousands*)	FY1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY2004 Estimate	FY2005 Estimate	Cost to Complete	Total Cost
D597 Wave Net Technology	1873	0	0	0	0	0	0	0	0	3844

Mission Description and Justification: The objective of this congressional special interest project was to develop and evaluate a Wave Net circuit to perform image compression and decompression. Wave Net is an application-specific integrated circuit that utilizes a neural network architecture to efficiently perform low loss image compression. Potential applications include compression of imagery for battlefield situation awareness, aerial surveillance sensor downlinks, and image based target hand-off.

FY 1998 Accomplishments:

- 1873 – Completed design, fabrication, and testing a Wave Net system to satisfy an Army video transmission objective utilizing previous year's prototype hardware and algorithm developments.
  – Completed demonstration and evaluation of Wave Net technology for combat vehicles, dismounted soldiers and commercial applications, and explored transition opportunities.

Total 1873

FY 1999 Planned Program: Program not funded in FY 1999

FY 2000 Planned Program: Program not funded in FY 2000

FY 2001 Planned Program: Program not funded in FY 2001

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PROJECT: D617

COST (*In Thousands*)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D617 Global Broadcast System (GBS) Information Management	0	3974	0	0	0	0	0	0	0	3974

Mission Description and Justification: The objective of this one year Congressional special interest project is to develop, install and evaluate an operational prototype Global Broadcast Service/Information (IM) system for the Army First Digitized Division network architecture. This program specifically addresses joint service demonstrations coordinated through the joint directors of laboratories technology panel for C4, and provides key demonstrations of systems integration across the Army's battlefield functional areas. GBS/IM will provide efficient high data rate connectivity between many distributed information sources and warfighters who receive the broadcast directly on small, inexpensive user terminals. Broadcast data includes digitized imagery, logistics data, weather data, maps, operational orders (e.g., Air Tasking Order), and video. Phase One was started in 1996 and used commercial satellite leases to provide a CONUS-based testbed located at US Army CECOM for the Army TF XXI Army Warfighter Experiment (AWE) for requirements definition and operational concept refinement.

FY 1990 Accomplishments: Program not funded in FY 1998

FY 1999 Planned Program:

- 1279 - Complete evaluation of the DARPA BADD Phase 2 ACTD Information Dissemination Management (IDM) application and unique architecture needs to apply emerging Army Battle Command System information technology.
  - Complete demonstration of wide band, high-speed transmission of Map Files.
- 2590 - Complete the development of a Tactical IDM (T-IDM) System Architecture that establishes T-IDM as a "User Owned and Operated System".
  - Complete the development of a T-IDM Experimentation Plan and stand-up a Developmental Server in the CECOM Testbed and at the Ft Hood Central Test Facility.
- 105 - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs

Total 3974

FY 2000 Planned Program: Program not funded in FY 2000.

FY 2001 Planned Program: Program not funded in FY 2001.

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